WEST TEXAS WEATHER MODIFICATION ASSOCIATION – SAN ANGELO, TEXAS

SEEDING REPORT – May 2, 2018

SYNOPTIC/MESOSCALE CONDITIONS:
Southwesterly flow aloft continues today with best dynamics over parts of Far West Texas. This system will slowly advance eastward bringing better dynamics over the region later this afternoon into the evening. A jet streak maximum will round the bottom of the trough later this afternoon enhancing dynamics even further. This should result in rapid tightening of the dryline which is placed over parts of the western Permian Basin and Trans-Pecos regions of Texas. By this afternoon, this boundary will be near a line from Robert Lee to Mertzon to Ozona. Showers and storms will likely fire up this evening as sufficient surface heating, strong moisture advection and a very unstable environment takes place. CAPE values nearing 3K J/Kg will provide plenty of energy with 0-6km bulk shear values over 40kt. Both parameters should support the development of severe thunderstorms.

LIFTING MECHANISM:
Dryline

THERMODYNAMIC INDICES (12Z KMAF)

Freezing Level (m)	4386	-15°C Height (m)	6450
Precipitable Water (inches)	0.79	CAPE (J/Kg)	1155
LCL	1326	CINH (J/Kg)	280
CCL	3084	LI(°C)	-6.5
MAF ICA	6.92	PB	6
Cloud Base (meters)	3481	DRT ICA	0.64
Warm Cloud Depth (meters)	905	Cloud Base Temp (°C)	8

DISCUSSION:
18Z analysis places the dryline just west of a line from Big Spring to Iraan. This boundary has progressed eastward efficiently today and is now tapping into a very unstable airmass. Surface based CAPE values ahead of the boundary are approaching 3K J/Kg with sufficient moisture as dew points are now in the mid-to-upper 50's closer to the dryline with some readings in the 60's further east. Convergence along the boundary is still lacking as dynamical forcing is lagging behind a bit. However, as we get later into the day, upper level support should strengthen and tighten convergence along the boundary allowing for storms to fire up. Latest HRRR model seems over aggressive with convection firing up near the target area around 19Z with more widespread coverage by 21Z. Not thinking that'll be case. Learning towards a later initiation around 21-22Z with more widespread coverage by 00Z. Pilots will be updated at 19Z and every hour after. At 1940Z, the first echo within the target area developed just NW of Big Spring. This prove the atmosphere has the resources to trigger convection and shows storm initiation is happening. First pilot was called airborne but may need both as another cluster of development is taking place just SW of Crockett County. Will only have 1 pilot at first, so we'll launch due west and see what area, north or south, will be best for seeding until second pilot becomes available. Pilot launched at 2015Z and headed due west. We'll target the convection in Sterling County first as the development in Terrell County was either dissipating or very slow to move. I'll keep an eye on that and if it threatens the area, we'll shoot down into Crockett County. Seeding began in Sterling County as a storm was over the Glasscock/Sterling County border. Inflow was quickly found and 3 dosages of glaciogenic flares were fired. We'll hang in this area and keep seeding as needed. This storm went from 40dbz pre-seeding to 63dbz post-seeding with tops starting at 9.5 growing to 11.5km. Other then the severe storm in Terrell County, this has been the strongest of all convection nearby

the target area for the day. This cell was seeded sufficiently through the 20Z and is now leaving the target area. We'll dive further south and investigate some newer echoes trying to develop. Meanwhile, severe storm in Terrell County fell apart for a bit but has reorganized as it nears Sheffield. We may have to head that way if it makes it over the county line. Second pilot became available and should be airborne at 2120Z. He'll head towards Crockett County while first pilot works a cell in Glasscock that'll push into Sterling County. However, latest radar imagery shows this cell dissipating rapidly. We'll check the south side of the storm to see if any inflow is left. First pilot had to RTB due to a minor aircraft issue. However, his services at this point are not needed as convection has been winding down over the last hour. Cloud coverage is spreading in coverage across the region and it seems the dryline may be retreating a bit. Second pilot will remain airborne to cover any pop-up storms and the storm in Crockett County. Cell #14, which started in Crockett County, was based over 13kft. Therefore, we had to pass that one up. We'll head further west in Reagan County, but may experience the same issue. We may revisit cell #14 before we wrap things up, but a few more cells south in Terrell County could follow a similar path that #14 took. Those will be investigated as well. We were able to get a few flares in cell #166 in western Reagan County, but seems these cells are falling victim to the extensive cloud coverage. At 2215Z, we decided to dive south into Crockett County and see if these two cells will make it into the county. If so, we'll be ready for them. We finally arrived at cell 89 at 2235Z which just became warned. This cell packed a punch. We seeded it aggressively with glaciogenic material but could not get too close as hail was very large and near cloud base. Storm was still very high, at 13,200ft, so our opportunity to seed will be limited before pilot needs to descend. We pulled off at 2250Z as the storm became simply to rough for the pilot to safely fly in. We'll push into Schleicher County where new isolated storms were firing up which may drift into Tom Green County. This cell was quickly seeded while the other two severe storms in Crockett were still ongoing, but showing signs of letting up, just a bit. Even in this cell, pilot encountered some soft hail, showing these storms have very strong updrafts. Had to RTB at 2320 as aircraft was out of flares due to an electrical issue with the left wing. Regardless,

WATCHES/WARNINGS:

T-Storm Warning – Crockett
T-Storm Watch – Entire Target Area
T-Storm Warning - Crockett

SEEDED CELL ID'S:

41	66	166	89	353						

FLIGHT INFORMATION:

TIME (Z)	Plane	Flare Location	County
2015	**49P**	IN AIR	
2043	**49P**	311° @ 49 nm	**Sterling**
2045	**49P**	311° @ 49 nm	**Sterling**
2046	**49P**	310° @ 49 nm	**Sterling**
2051	**49P**	216° @ 49 nm	**Sterling**
2052	**49P**	315° @ 51 nm	**Sterling**
2052	**49P**	314° @ 51 nm	**Sterling**
2056	**49P**	317° @ 51 nm	**Sterling**
2106	**49P**	310° @ 51 nm	**Sterling**
2120	**41P**	In Air	
2125	**49P**	RTB - Maint	
2201	**41P**	257° @ 53 nm	**Reagan**
2202	**41P**	258° @ 54 nm	**Reagan**

2237	**41P**	235° @ 67 nm	**Crockett**
2238	**41P**	235° @ 62 nm	**Crockett**
2240	**41P**	235° @ 62 nm	**Crockett**
2244	**41P**	235° @ 62 nm	**Crockett**
2250	**41P**	236° @ 47 nm	**Crockett**
2308	**41P**	216° @ 21 nm	**Irion**
2313	**41P**	218° @ 19 nm	**Irion**
2314	**41P**	205° @ 18 nm	**Irion**
2320	**41P**	RTB	

Seeding operations were conducted over Crockett (10), Reagan (4), Sterling (16) and Irion (6) Counties. 36 flares were burned within X clouds. This is the 1st day for seeding in May and the 1st day for seeding during the season.